

EPA NEW ENGLAND  
COMPENDIUM OF QUALITY ASSURANCE  
PROJECT PLAN REQUIREMENTS AND GUIDANCE



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Region I  
Quality Assurance Unit Staff  
Office of Environmental Measurement and Evaluation

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## Preface

The Region I, EPA-New England Quality Assurance Unit has restructured its Quality Assurance Project Plan (QAPP) Program in response to the recently reissued EPA Order 5360.1 CHG 1, July 1998. Among other requirements, this “QA Order” requires the development, review and approval of QAPPs for all environmental data operations performed by or on behalf of EPA. The term “environmental data operations” refers to activities involving the collection, generation, compilation, analysis, evaluation and use of environmental data. In addition, these requirements are incorporated into voluntary, consensual or unilateral enforcement agreements, decrees and orders. The Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance and its attachments implement within EPA-NE the national QAPP requirements specified in “EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations”, EPA QA/R-5, October 1998, or most recent revision, and the “EPA Quality Manual for Environmental Programs”, 5360, July 1998.

As a Regional implementation document, the Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance;

- outlines a Regional systematic planning process to ensure project quality objectives are appropriately identified
- defines a minimum set of project QA/QC activities and procedures to ensure that data collected for this Region are of known and documented quality and can be used in environmental decision making
- specifies project information that must be compiled and included in a QAPP to document that project activities have been properly planned
- and, assigns roles and responsibilities to project management/personnel and to EPA-NE to establish accountability.

**REGION I, EPA-NEW ENGLAND COMPENDIUM OF  
QUALITY ASSURANCE PROJECT PLAN REQUIREMENTS AND GUIDANCE**

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**ATTACHMENTS**

- A. REGION I, EPA-NEW ENGLAND QUALITY ASSURANCE PROJECT PLAN  
MANUAL, DRAFT, SEPTEMBER 1998
- B. THE VOLUNTEER MONITOR'S GUIDE TO QUALITY ASSURANCE PROJECT  
PLANS, EPA 841-B-96-003, SEPTEMBER 1996
- C. GENERIC QUALITY ASSURANCE PROJECT PLAN GUIDANCE FOR PROGRAMS  
USING COMMUNITY LEVEL BIOLOGICAL ASSESSMENT IN WADEABLE  
STREAMS AND RIVERS, EPA 841-B-95-004, JULY 1995
- D. QUALITY ASSURANCE REQUIREMENTS FOR CONDUCTING BROWNFIELDS  
SITE ASSESSMENTS, DRAFT, OCTOBER 1996

# REGION I, EPA-NEW ENGLAND COMPENDIUM OF QUALITY ASSURANCE PROJECT PLAN REQUIREMENTS AND GUIDANCE

## 1.0 INTRODUCTION

A Quality Assurance Project Plan (QAPP) is a required planning document that provides a “blueprint” for obtaining the type, quantity and quality of data needed to support environmental decision making. The QAPP documents all quality assurance (QA), quality control (QC) and technical activities and procedures associated with planning, implementing and assessing all environmental data operations. EPA-New England (EPA-NE) recognizes the following two types of QAPPs:

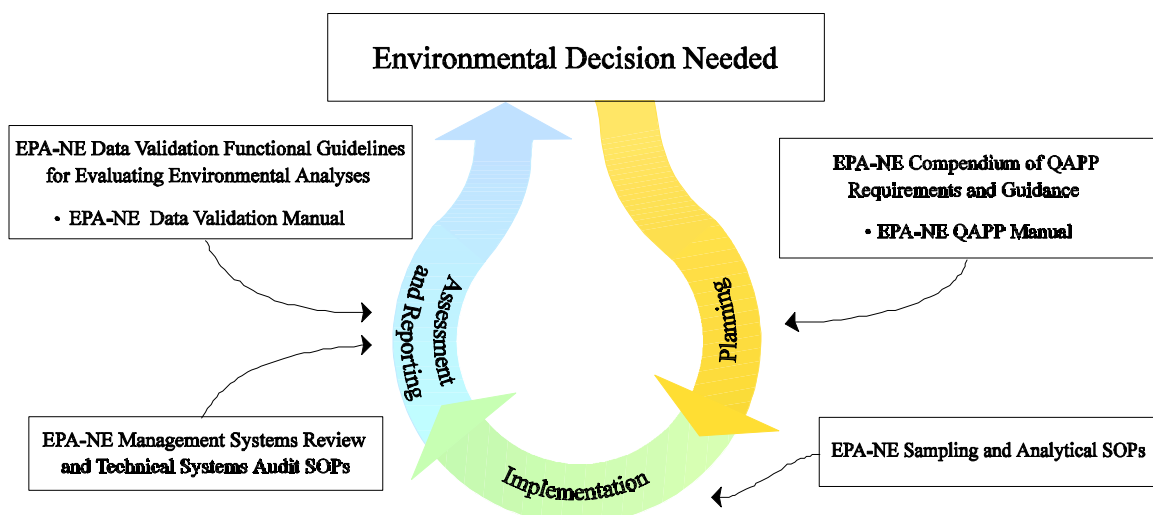
- “Project-specific QAPPs” provide a QA “blueprint” specific to one project or task. Project-specific QAPPs are used when projects are limited in scope and time and, in general, can be considered the sampling and analysis plan/workplan for the project.
- “Generic program QAPPs” provide an overarching plan describing a program's quality objectives, and documents the comprehensive set of sampling, analysis, QA/QC, data validation and evaluation, and assessment Standard Operating Procedures (SOPs) specific to one program or group. In contrast to the project-specific QAPP, the generic program QAPP serves as an umbrella under which project-specific tasks may be conducted over an extended period of time. Project or task-specific information, not covered by the umbrella, is documented in detailed sampling and analysis plans/workplans, which use the generic program QAPP as an informational reference whenever appropriate.

EPA Order 5360.1 CHG 1 requires that a QAPP be prepared and approved for all environmental data operations performed by or on behalf of EPA prior to the initiation of those data operations. In addition to the QAPP requirement, this Order also mandates that documented Quality Systems be in place to support the development, review, approval, implementation and assessment of all environmental data operations and to ensure that environmental technologies are designed, constructed, and operated according to defined expectations. EPA-NE designates those organizations performing work for or on behalf of EPA as Lead Organizations and includes those organizations performing work in response to voluntary, consensual or unilateral enforcement agreements, decrees and orders. Lead Organizations must develop, operate and document their own Quality Systems in Quality Management Plans (QMPs) to ensure that environmental data acquired for the Agency are of known and documented quality and are suitable for their intended use.

For guidance in developing Quality Systems, refer to Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs, American National Standard, ANSI/ASQC E4-1994; EPA Requirements for Quality Management Plans, EPA QA/R-2, October 1998 or most recent revision; and EPA Quality Manual for Environmental Programs, 5360, July 1998.

## 2.0 SCOPE

The Region I, EPA-NE Compendium of Quality Assurance Project Plan Requirements and Guidance (hereafter referred to as the *EPA-NE QAPP Compendium*) is based on Agency requirements as outlined in EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations,



**Figure 1 EPA-NE Quality System for Environmental Data Operations and Supporting EPA-NE Requirements and Guidance Documents**

EPA QA/R-5, October 1998 or most recent revision. The *EPA-NE QAPP Compendium* provides the framework for all project-specific and generic program QAPPs prepared for environmental data operations conducted in EPA-NE. It is a companion document to other documents written by the Region I, EPA-NE Quality Assurance Unit. These documents (refer to Figure 1) form the basis for the EPA-NE Quality System supporting Regional environmental data operations. These documents should be included in applicable interagency agreements and voluntary, consensual or unilateral enforcement agreements, decrees and orders.

Attachment A of the *EPA-NE QAPP Compendium*, the Region I, EPA-New England Quality Assurance Project Plan Manual (hereafter referred to as the *EPA-NE QAPP Manual*) specifies requirements and provides comprehensive, detailed guidance for developing project-specific and generic program QAPPs. All actions, activities and procedural steps described as “must” in the *EPA-NE Compendium* and *EPA-NE QAPP Manual* are required. All actions, activities and procedural steps described as “should” in the *EPA-NE QAPP Compendium* and *EPA-NE QAPP Manual* are suggested but not required. The *EPA-NE QAPP Manual* must be used by EPA-NE and other Lead Organizations when performing environmental data operations. The *EPA-NE QAPP Manual* requires that specific QAPP elements be addressed and that specific project information, as itemized in Table 1, be included in the QAPP. QAPP Worksheets are provided in Appendix A of the *EPA-NE QAPP Manual* to help compile this critical project information. All applicable worksheet information must be incorporated directly into the QAPP as Tables, Flowcharts, Diagrams, Attachments, etc.

Additional QAPP guidance is provided in Attachments B through D of the *EPA-NE QAPP Compendium* and must be followed when so directed by the applicable EPA-NE program office. Even if program-specific guidance is followed (Att. B-D), the required QAPP elements and the information specified in Table 1 still must be included in the QAPP. Additional Agency program/initiative-specific QAPP guidance documents will be developed as needed.

**Since the content and level of detail in individual QAPPs will vary according to the work being performed and the intended use of the data, EPA-NE supports a “graded approach” when preparing QAPPs. In other words, the degree of documentation and detail will vary based upon the complexity and cost of the project. Appropriate consideration should be given to the significance of the environmental problem to be investigated, the environmental decision to be made, and the impact on human health and the environment.**

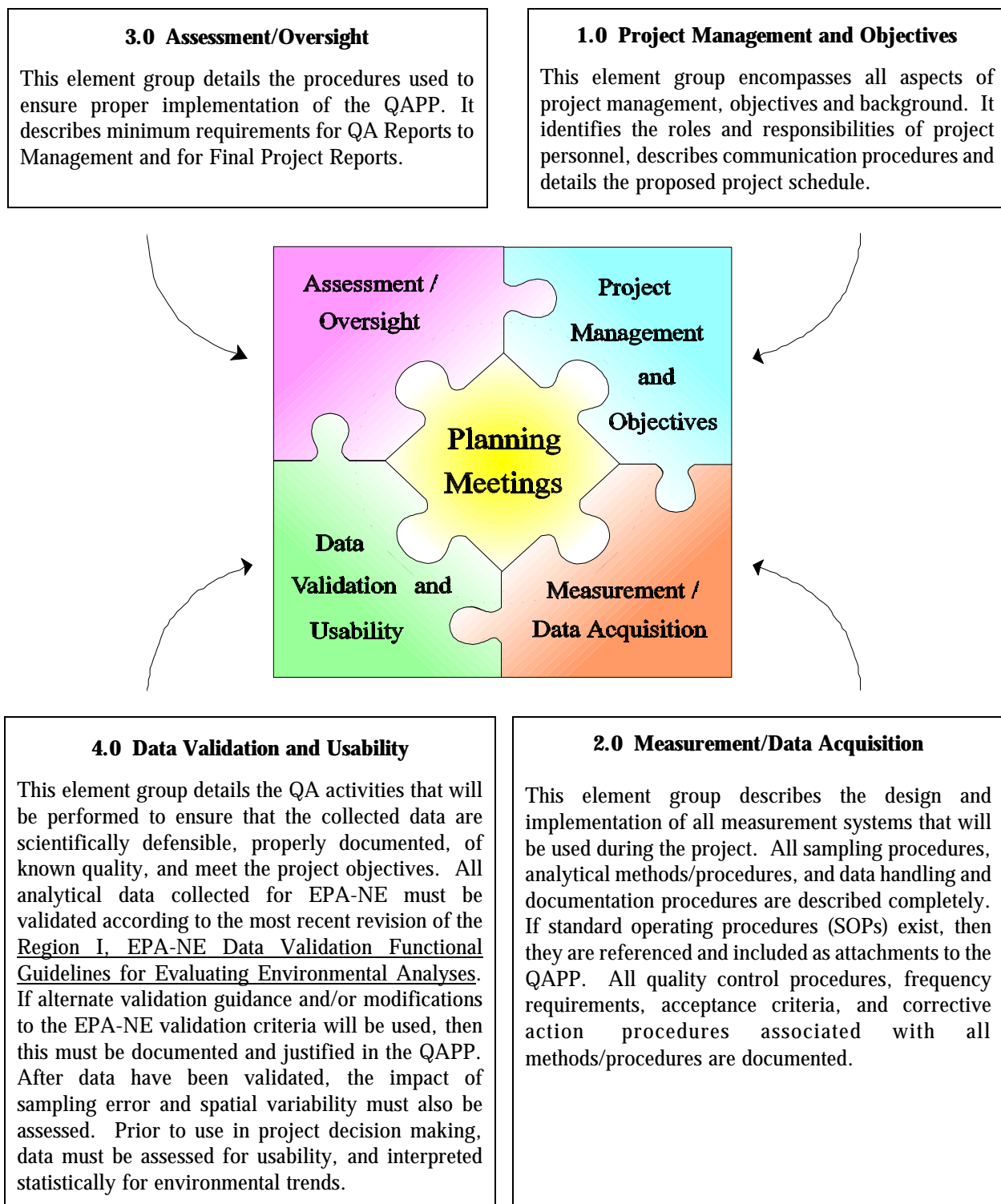
### **3.0 REQUIRED QAPP ELEMENTS**

In accordance with EPA QA/R-5, there are four basic element groups that must be addressed in a QAPP, refer to Figure 2. In order to piece these interrelated elements together and to ultimately meet project objectives, the Region I Systematic Planning Process as outlined in Figure 1 of the *EPA-NE QAPP Manual* must be utilized and planning meetings (a.k.a. scoping meetings) must be held.

Specific requirements for each element group are detailed in Attachment A, the *EPA-NE QAPP Manual*, and in the program-specific guidance documents provided in Attachments B through D.

**It is strongly recommended that generic program QAPPs and project-specific QAPPs be prepared using the format described in the attached *EPA-NE QAPP Manual* and sections titled accordingly.**

However, if some, or all, of the required QAPP elements are incorporated into other project planning documents (i.e., Sampling and Analysis Plans (SAPs), Field Sampling Plans (FSPs), Field Operations Plans (FOPs), Project Operations Plans (POPs) or General Project Workplans (WPs)), then a cross-reference table, similar to Table 1, must be provided to identify where each required QAPP element and all required information, as defined by the EPA-NE QAPP Worksheets, are located in the inclusive project document. The reference location must be exact and must specify the complete document title, date, section number, page numbers, and location of all QAPP elements and information in the inclusive document.



**Figure 2. EPA-NE QAPP Elements**

## **4.0 ROLES AND RESPONSIBILITIES**

### **Lead Organization**

Lead Organizations are those entities that are responsible and accountable for all phases of the environmental data operation. The Lead Organization may perform the project work directly or contract for field sampling and/or analytical services and/or data validation and/or data assessment and/or audits and assessments.

The Lead Organization is responsible for ensuring that there is an approved QAPP in place prior to beginning any environmental data operation. Also, the Lead Organization is responsible for ensuring that organization personnel, contractors and/or subcontractors perform project work as prescribed in the approved QAPP. To that end, Lead Organizations are responsible for planning and conducting internal assessments of project activities.

Lead Organizations may include the following:

- EPA-NE
- Other Government Agencies under interagency agreements and Memoranda of Understanding (MOUs) with EPA-NE
- States, Tribes and Local governments under financial agreements, including grants and cooperative agreements with EPA-NE
- Non-profit Organizations (e.g., Volunteer Organizations, Interstate Associations, etc.) under financial agreements with EPA-NE, including institutions of higher education and hospitals
- Regulated Facilities (e.g., potentially responsible parties) under voluntary, consensual or unilateral enforcement agreements, decrees and orders.

### **Project Manager**

The Project Manager is responsible for directing and/or overseeing and coordinating all project activities for the Lead Organization. He/she is responsible for submitting QAPPs and QAPP revisions and amendments to appropriate personnel, with sufficient lead time, for review and approval. QAPPs should be submitted to the approval authority for review and approval no less than 30 days in advance of the scheduled environmental data operation. The Project Manager must ensure that all technical issues identified during QA review are satisfactorily addressed and documented prior to beginning the data collection activity. The Project Manager is also responsible for reviewing the QAPP annually and documenting this review in a letter to the approval authority. Refer to Figure 3 for an outline of the QAPP development process.

### **Case Team**

The Project Manager assembles a Case Team consisting of technical personnel including data generators, QA scientists, and data users to plan the project. The size of the Case Team should reflect the complexity of the project. For example, small volunteer monitoring projects may have Case Teams comprised of only two or three people.

Planning (scoping) meetings are convened to identify project objectives; environmental questions that must be answered; project Action Limits; the type and quantity of data; and how "good" the data must be (the data quality) to ensure that scientifically defensible environmental decisions are made. The



Case Team defines the quality of the data by setting acceptability limits for the project, otherwise known as measurement performance criteria. Once measurement performance criteria have been decided upon, the Case Team can select sampling and analytical methods that have appropriate quantitation limits and quality control limits to achieve project objectives.

The Case Team is responsible for compiling all project information as defined in the *EPA-NE QAPP Manual* and on the EPA-NE QAPP Worksheets and resolving all technical issues prior to the preparation of the QAPP document. **Ultimately, it is the responsibility of the project Case Team, not the QAPP preparer alone, to design a QA “blueprint” that meets project objectives.**

### **QAPP Preparation Team/Writer**

The QAPP should be written by a team/person that has been involved in the project planning phase. Members of the QAPP Preparation Team should be experienced in many aspects of environmental science, including chemistry, engineering, hydrogeology and risk assessment. In addition, the QAPP Preparation Team should have experience with the sample collection procedures, analytical methods and data evaluation and assessment procedures that will be used for the project.

### **Project Personnel**

An organizational chart must clearly show the reporting relationships between EPA-NE and project personnel from the Lead Organization, including contractors and subcontractors.

All project personnel are responsible for reading and understanding the QAPP before beginning field work. All individuals that have project responsibilities must sign a Project Personnel Sign-off Sheet (EPA-NE QAPP Worksheet #4) to document that they have read all relevant portions of the QAPP.

All project personnel are responsible for implementing the QAPP as prescribed.

### **EPA-NE QA UNIT**

The EPA-NE QA Unit is responsible for reviewing and approving all intramural and extramural QAPPs, except in the case where the review and approval authority has been delegated by the EPA-NE Regional Quality Assurance Manager (RQAM) to:

- A non-EPA partner organization such as a State, Tribe, or other Federal Agency.

Delegation of this authority to a non-EPA organization is contingent upon having an EPA-approved Quality Management Plan (QMP). An EPA-approved QMP documents that the organization has an acceptable Quality System to support all technical operations, including environmental data operations and environmental technology operations.

- An EPA-NE program (i.e., Superfund, RCRA).

Delegation of this authority to an EPA-NE program is documented in the Region I QMP. In addition, the program is responsible for providing to the QA Unit copies of the completed QAPP “Title and Approval Page” and copies of DQO/PQO Summary Forms prior to the initiation of environmental data operations.

## **5.0 QAPP REVIEW AND APPROVAL**

### **Internal Review and Approval**

- ! The QAPP should undergo internal review at all levels. The Lead Organization is responsible for ensuring that the QAPP includes all required QAPP elements and information in accordance with Table 1 of this document and that project quality objectives (PQOs), technical activities and related QA/QC will result in data of known and documented quality that can be used in environmental decision making. To that end, the Lead Organization is responsible for performing a completeness check and should require that organizational personnel, contractors, and subcontractors review applicable sections of the QAPP to ensure technical adequacy of the document prior to submitting it to EPA-NE (or the delegated approval authority, if applicable).

### **External Review and Approval**

- ! In accordance with EPA Order 5360.1 CHG 1, EPA-NE must review and approve all intramural and extramural QAPPs before environmental data operations can begin. This Order specifies that the authority to review and approve QAPPs may be delegated to a partner organization such as a State, Tribe, or other Federal Agency. Delegation of this authority by the EPA-NE RQAM is contingent upon that organization having an acceptable Quality System documented in an EPA-approved Quality Management Plan (QMP).
- ! EPA-NE requires all QAPPs to be complete and technically adequate. To that end, a Level 1 QAPP Completeness Check is performed to ensure that all required QAPP elements and information, as specified in Table 1 of this document, are present in the QAPP. When a QAPP is deemed complete, a Level 2 Technical QAPP Review is performed to ensure that project quality objectives, technical activities and related QA/QC will result in data of known and documented quality that can be used in environmental decision-making.
- ! All comments provided by EPA-NE (or the delegated approval authority, if applicable) must be acceptably addressed in writing before environmental data operations can begin. The response document (either a revised QAPP or letter responding to specific deficiencies) should contain complete identifying information, as it is presented on the original QAPP Title and Approval Page, with updated signatures and dates. Any revisions to the original QAPP document should be identified with a red-line or side bar to expedite document review and approval.

## **6.0 IMPLEMENTATION OF APPROVED QAPP**

The approved QAPP must be implemented as prescribed, however, the QAPP may be modified at any time, after undergoing the proper approval process, to ensure project objectives are met.

## **7.0 REVISION AND MODIFICATION OF APPROVED QAPP**

Project-specific QAPPs and generic program QAPPs are approved for a fixed period of time, specific to the environmental data operation. Project-specific QAPPs and generic program QAPPs must be kept current and revised whenever necessary, or when so directed by the approval authority, or at a minimum of every five years until the project is completed.

## **7.1 ANNUAL REVIEW OF APPROVED QAPP**

Approved project-specific QAPPs and approved generic program QAPPs must be reviewed annually by the Lead Organization, and this annual review must be documented in a letter to the appropriate approval authority. If minor revisions are made to the approved QAPP that do not require reapproval (i.e., revisions do not impact data quality), then these minor revisions must be documented in either a letter that outlines the revisions or in a revised QAPP document. Likewise, if minor revisions are made to the approved QAPP that do require reapproval, then these minor revisions must be documented in either a letter that outlines the revisions or in a revised QAPP document and must be submitted for review and reapproval. If extensive revisions are necessary (i.e., greater than 10 pages and/or there are multiple impacts on data quality) requiring reapproval, then a revised QAPP document must be submitted for review and reapproval.

## **7.2 MODIFICATION OF APPROVED QAPP**

When procedures and/or activities described in the original QAPP must be modified immediately to achieve project objectives, then the QAPP must be amended. This amendment must be reviewed and approved in the same manner as the original QAPP. The amendment should contain complete identifying information, as presented on the original QAPP Title and Approval Page, with updated signatures and dates. Only after the amendment has been approved can the change be implemented.

Verbal approval of modifications may be obtained to expedite project work. Descriptions of modifications and verbal approvals must be documented in telephone logs which are retained in the project file. Subsequently, this verbally approved modification must be documented in an amendment to the QAPP and submitted to EPA-NE (or other approval authority, if applicable) within 7 working days for formal signature approval.

## **8.0 QAPP ARCHIVAL**

All QAPPs, including reviewers' comments and responses to reviewers' comments (revised QAPPs, QAPP amendments, and response letters addressing specific issues) must be archived in the appropriate project/program file according to the procedures specified by the Lead Organization in the QAPP and/or their QMP.

Project files must be retained for the period of time specified in the interagency agreement, MOU, cooperative agreement, financial agreement, contract, or voluntary, consensual or unilateral enforcement agreement, decree or order.

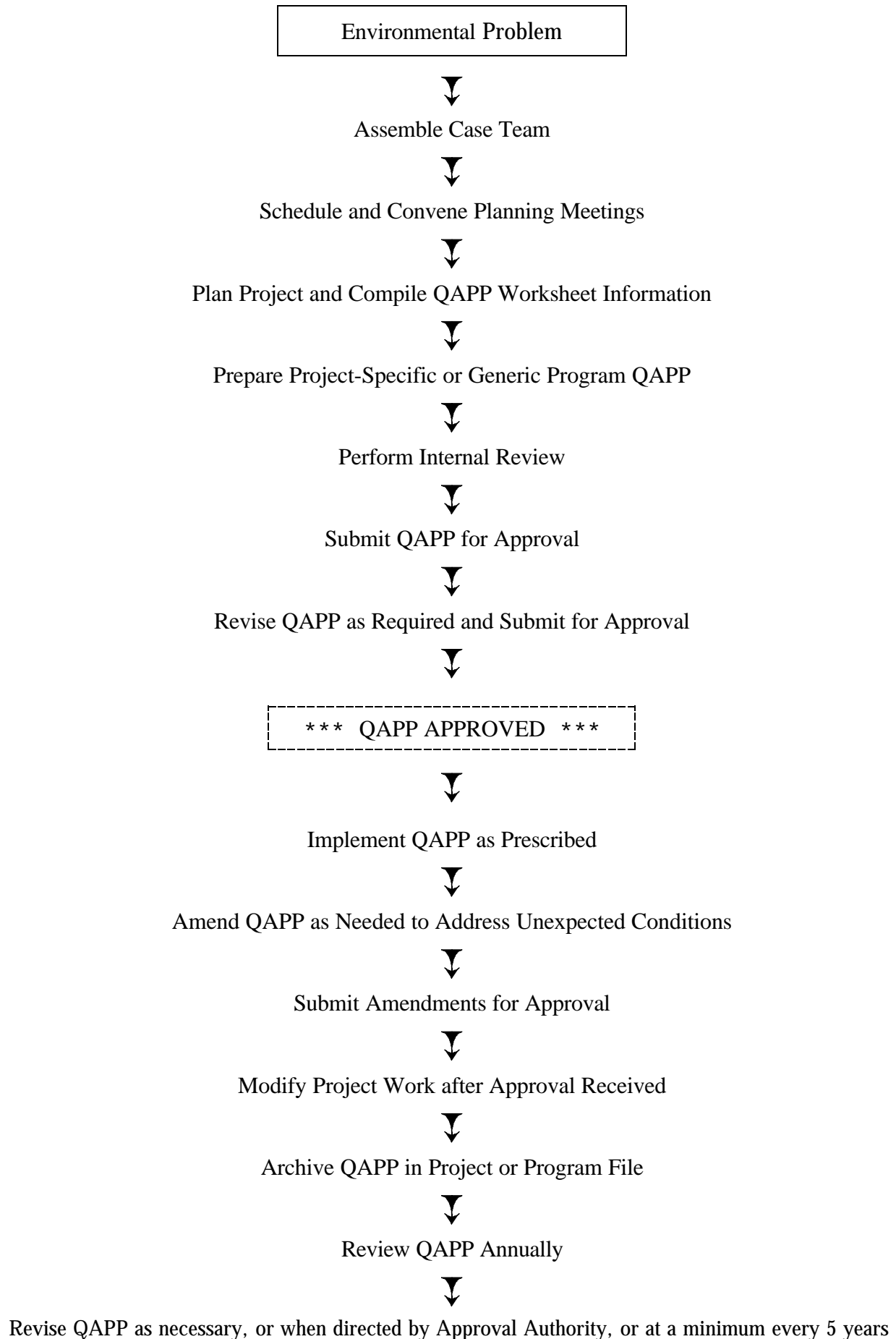
EPA-NE retains the authority to request project/program files for any extramural project/program during the period of performance of the extramural agreement.

## 9.0 REFERENCES

1. Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs, American National Standard, ANSI/ASQC E4-1994.
2. EPA Requirements for Quality Management Plans, October 1998, (EPA QA/R-2)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
3. EPA Quality Manual for Environmental Programs, 5360, July 1998  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
4. March 2, 1999 Memorandum From Norine E. Noonan (AA) to Assistant Administrators and Regional Administrators Re: Clarification of Terminology for the EPA Quality System with attachments
5. EPA Requirements for Quality Assurance Project Plans, October 1998, (EPA QA/R-5)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
6. EPA Guidance for Quality Assurance Project Plans, Draft Final-July 1998, (EPA QA/G-5)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
7. Guidance for the Data Quality Objective Process, EPA/600/R-98/018, February 1998, (EPA QA/G-4)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
8. Region I, Quality Assurance Management Plan, Revision 2, Approved by EPA's Quality Assurance Division 10/24/96
9. Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, December 1996  
Website: <http://www.epa.gov/region01/oeme/toc.html>  
Contact: Dr. Steve Stodola, EPA-NE OEME, 781-860-4634
10. Guidance for the Preparation of Standard Operating Procedures for Quality-Related Operations, EPA/600/R-96/027, November 1995, (EPA QA/G-6)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
11. Guidance for Data Quality Assessment: Practical Methods for Data Analysis, EPA/600/R-96/084, January 1998, (EPA QA/G-9)  
Website: <http://es.epa.gov/ncercqa/qa/index.html>
12. National Enforcement Investigations Center (NEIC) Policies and Procedures, EPA-330/9-78-001-R, May 1978, Rev. December 1981  
NTIS: 1-800-553-6847
13. The Volunteer Monitor's Guide To Quality Assurance Project Plans, EPA/841/B-96/003, September 1996

14. Generic Quality Assurance Project Plan Guidance for Programs Using Community Level Biological Assessment in Wadeable Streams and Rivers, EPA/841/B-95/004, July 1995  
Website: <http://www.ntis.gov/index.html>  
NTIS: 1-800-553-6847
15. Implementation of Quality Assurance Requirements for Organizations Receiving EPA Financial Assistance  
Website: <http://www.epa.gov/ogd/qa.htm>

**Figure 3. Outline of QAPP Development**



**Table 1. Region I, EPA-NE QAPP Requirement Summarization**

<b>EPA QA/R-5 QAPP ELEMENTS</b>	<b>REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS</b>	<b>EPA-NE QAPP Worksheet #</b>	<b>REQUIRED INFORMATION</b>
<b>Project Management and Objectives</b>			
A1	1.0 Title and Approval Page	1	- Title and Approval Page
A2	2.0 Table of Contents and Document Format 2.1 Table of Contents 2.2 Document Control Format 2.3 Document Control Numbering System 2.4 EPA-NE QAPP Worksheet #2	2	- Table of Contents - EPA-NE QAPP Worksheet
A3	3.0 Distribution List and Project Personnel Sign-off Sheet	3 4	- Distribution List - Project Personnel Sign-off Sheet
A4, A8	4.0 Project Organization 4.1 Project Organizational Chart 4.2 Communication Pathways 4.2.1 Modifications to Approved QAPP 4.3 Personnel Responsibilities and Qualifications 4.4 Special Training Requirements/ Certification	5a 5b 6 7	- Organizational Chart - Communication Pathways - Personnel Responsibilities and Qualifications Table - Special Personnel Training Requirements Table
A5	5.0 Project Planning/Project Definition 5.1 Project Planning Meetings 5.2 Problem Definition/Site History and Background	8a 8b	- Project Scoping Meeting Attendance Sheet with Agenda and other Project Planning Meeting Documentation - Problem Definition/Site History and Background - EPA-NE DQO Summary Form - Site Maps (historical and present)
A6	6.0 Project Description and Schedule 6.1 Project Overview 6.2 Project Schedule	9a 9b 9c 9d 10	- Project Description - Contaminants of Concern and Other Target Analytes Table - Field and Quality Control Sample Summary Table - Analytical Services Table - System Designs - Project Schedule Timeline Table
A7	7.0 Project Quality Objectives and Measurement Performance Criteria 7.1 Project Quality Objectives 7.2 Measurement Performance Criteria	11a 11b	- Project Quality Objectives/Decision Statements - Measurement Performance Criteria Table
<b>Measurement/Data Acquisition</b>			
B1	8.0 Sampling Process Design 8.1 Sampling Design Rationale	12a 12b	- Sampling Design and Rationale - Sampling Locations, Sampling and Analysis Method/SOP Requirements Table - Sample Location Map

<b>EPA QA/R-5 QAPP ELEMENTS</b>	<b>REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS</b>	<b>EPA-NE QAPP Worksheet #</b>	<b>REQUIRED INFORMATION</b>
B2, B6, B7, B8	9.0 Sampling Procedures and Requirements 9.1 Sampling Procedures 9.2 Sampling SOP Modifications 9.3 Cleaning and Decontamination of Equipment/Sample Containers 9.4 Field Equipment Calibration 9.5 Field Equipment Maintenance, Testing and Inspection Requirements 9.6 Inspection and Acceptance Requirements for Supplies/ Sample Containers	13 12b 14 15	<ul style="list-style-type: none"> <li>- Sampling SOPs</li> <li>- Project Sampling SOP Reference Table</li> <li>- Sampling Container, Volumes and Preservation Table</li> <li>- Field Sampling Equipment Calibration Table</li> <li>- Cleaning and Decontamination SOPs</li> <li>- Field Equipment Maintenance, Testing and Inspection Table</li> </ul>
B3	10.0 Sample Handling, Tracking and Custody Requirements 10.1 Sample Collection Documentation 10.1.1 Field Notes 10.1.2 Field Documentation Management System 10.2 Sample Handling and Tracking System 10.3 Sample Custody	16	<ul style="list-style-type: none"> <li>- Sample Handling, Tracking and Custody SOPs</li> <li>- Sample Handling Flow Diagram</li> <li>- Sample Container Label (Sample Tag)</li> <li>- Chain-of-Custody Form and Seal</li> </ul>
B4, B6, B7, B8	11.0 Field Analytical Method Requirements 11.1 Field Analytical Methods and SOPs 11.2 Field Analytical Method/SOP Modifications 11.3 Field Analytical Instrument Calibration 11.4 Field Analytical Instrument/ Equipment Maintenance, Testing and Inspection Requirements 11.5 Field Analytical Inspection and Acceptance Requirements for Supplies	17 18 19	<ul style="list-style-type: none"> <li>- Field Analytical Methods/SOPs</li> <li>- Field Analytical Method/SOP Reference Table</li> <li>- Field Analytical Instrument Calibration Table</li> <li>- Field Analytical Instrument/Equipment Maintenance, Testing and Inspection Table</li> </ul>
B4, B6, B7, B8	12.0 Fixed Laboratory Analytical Method Requirements 12.1 Fixed Laboratory Analytical Methods and SOPs 12.2 Fixed Laboratory Analytical Method/SOP Modifications 12.3 Fixed Laboratory Instrument Calibration 12.4 Fixed Laboratory Instrument/ Equipment Maintenance, Testing and Inspection Requirements 12.5 Fixed Laboratory Inspection and Acceptance Requirements for Supplies	20 21	<ul style="list-style-type: none"> <li>- Fixed Laboratory Analytical Methods/SOPs</li> <li>- Fixed Laboratory Analytical Method/SOP Reference Table</li> <li>- Fixed Laboratory Instrument Maintenance and Calibration Table</li> </ul>



<b>EPA QA/R-5 QAPP ELEMENTS</b>	<b>REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS</b>	<b>EPA-NE QAPP Worksheet #</b>	<b>REQUIRED INFORMATION</b>
B5	13.0 Quality Control Requirements 13.1 Sampling Quality Control 13.2 Analytical Quality Control 13.2.1 Field Analytical QC 13.2.2 Fixed Laboratory QC	22a 22b  23a 23b  24a 24b	<b>Sampling</b> - Field Sampling QC Table - Field Sampling QC Table cont. <b>Analytical</b> - Field Analytical QC Sample Table - Field Analytical QC Sample Table cont. - Field Screening/Confirmatory Analysis Decision Tree - Fixed Laboratory Analytical QC Sample Table - Fixed Laboratory Analytical QC Sample Table cont.
B9	14.0 Data Acquisition Requirements	25	- Non-Direct Measurements Criteria and Limitations Table
A9, B10	15.0 Documentation, Records and Data Management 15.1 Project Documentation and Records 15.2 Field Analysis Data Package Deliverables 15.3 Fixed Laboratory Data Package Deliverables 15.4 Data Reporting Formats 15.5 Data Handling and Management 15.6 Data Tracking and Control	26	- Project Documentation and Records Table - Data Management SOPs
<b>Assessment/Oversight</b>			
C1	16.0 Assessments and Response Actions 16.1 Planned Assessments 16.2 Assessment Findings and Corrective Action Responses 16.3 Additional QAPP Non-Conformances	27a 27b 27c	- Assessment and Response Actions - Project Assessment Table - Project Assessment Plan - Audit Checklists
C2	17.0 QA Management Reports	28	- QA Management Reports Table
<b>Data Validation and Usability</b>			
D1	18.0 Verification and Validation Requirements		- Validation Criteria Documents *
D2	19.0 Verification and Validation Procedures	29a 29b 29c	- Data Evaluation Process - Data Validation Summary Table - Data Validation Modifications
D3	20.0 Data Usability/Reconciliation with Project Quality Objectives	30	- Data Usability Assessment

\* Include Data Validation Criteria Document as an attachment to the QAPP if Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses will not be used for validating project data.

Note: Required project-specific information should be provided in tabular format, as much as practicable. However, sufficient written discussion in text format should accompany these tables. Certain sections, by their nature, will require more written discussion than others. In particular, Section 8.0 should provide an in-depth explanation of the sampling design rationale and Sections 18-20 should describe the procedures and criteria that will be used to verify, validate and assess data usability.